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Health management of Institutionalized Juvenile Delinquents: A Proposed Protocol

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ABSTRACT

Juvenile delinquency is a critical problem that is becoming rampant in Egypt. Juvenile delinquency, also known as "juvenile offending", is participation in illegal behavior by minors who are younger than the statutory age of majority; any person between the ages of 7 to 18, and violates the law. **Aim**: This study aims to propose a protocol for health management of Institutionalized Juvenile Delinquents **Design:** a descriptive analytic study was used to conduct this study. **Sample:** A purposive sample of 318 juvenile delinquents (248 males, and 70 females) their ages ranged from 15 to 18 years admitted since not less than 3 months and carrying out legal punishing period. **Setting:** five Egyptian social care institutions El Marg ,El Agoza, Ain Shams, Kobry El Kobba, and Dar El Aman Social Care Institution. **Tools**: three tools were used for data collection. First tool: Self-administered Questionnaire form , Second tool: Physical examination sheet from head to toe, Third tool: An observational checklist. **Results:** results of this study indicated that, the majority of juvenile delinquents (78%) were males and 79.6% of them left their schools before admission; 83.3% of them were smokers and 54%out of them were drug users, they suffered many common health problems especially injuries and signs of somatic abuse like 51.3% wounds, 34.9% burns, and 50.6% fractures.; 42.8% had high antisocial behaviors. The majority of the institutions environment (80%) was insufficient security, also 80% had incomplete medical services **Conclusion:** the study concluded that the major factors related to those institutionalized juvenile delinquents were socio-economic factors and they suffered many physical, psychological and social health problems inside unsuitable rehabilitated institutions. **Recommendations:** the study recommended that ,the proposed protocol for health management of Institutionalized Juvenile Delinquents that's evidence – based should be implemented and evaluated in relation to prevent health problems of Juvenile Delinquents.

Key words: Juvenile Delinquent, Social Care Institutions, Proposed protocol, Health management

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INTRODUCTION

Juvenile delinquency is defined as any crime committed by children and adolescents under statutory age. A juvenile delinquent is one who is a minor with major problems. The age limit and also the meaning of delinquency vary in most countries, but it is always below 18 years. Generally, any person between the ages of 7 to 18, who violates the law, is considered as delinquent and persons above this age are considered as criminals **(Siegel et al., 2011).** The most greatest risk of falling into juvenile delinquency are rapid population growth, the unavailability of family support services, unemployment, the decline in the authority of local communities, ineffective educational

systems and discrimination against minority groups **(Aron and Dallaire, 2010)**.

The number of children in especially difficult circumstances is estimated to have increased from 150 million to more than 200 million between 2000 and 2010 all over the world **(Harnsberger, 2011)**. In Egypt more than 25,202 juvenile delinquents involved 24,648 males and 554 females in custody, social care institutions, social offices and observation offices all over the country. There are only 3,570 juvenile delinquents in custodial and social care institutions, 3,105 males and 465 females **(Egyptian Ministry of Society Solidarity, 2012)**.

Although some risk factors are common to many child delinquents, the patterns and particular combination of risk factors vary from child to child. Professionals have learned a great deal about which risk and protective factors are relevant for screening and intervention. For example, most professionals agree that early on in a child's life, the most important risks stem from individual factors (e.g., birth complications, hyperactivity, sensation seeking, temperamental difficulties) and family factors (e.g., parental antisocial or criminal behavior, substance abuse, and poor child-rearing practices). As the child grows older and becomes integrated into society, new risk factors related to peers influences, the school, and the community begins to play a larger role. The risks of developing delinquency in juveniles were found to be very much related to the parental interpersonal relationships, their demographic characteristics and the socioeconomic status of the family. **(Alnasir and Al-Falaij 2016)**.

Some studies reported that variables linked to delinquency are related to family conditions which include: family warmth, family relations, emotional conflict, and family practice. It is reported that children are vulnerable to commit serious crimes if belong to mothers with mental disorders as families remain to be the primary socialization agents for the development of moral values and ethical standards in children and youth **. (Bartol and Bartol ,2009 &Kemme, et al., 2014 &Alnasir and Al-Falaij 2016).**

According to **World Health Organization, (2010)**, juvenile delinquents face several problems in their dealings with others inside the custodial and social care institution as physical problems as acute illness, chronic physical conditions and communicable diseases. Psychological and mental problems as stress, transitory life style, poor relationships with others, child abuse, withdrawal and lying escape from the institution. Social problems as illiteracy, violent environment, neglect, smoking, discrimination, lack of accessible resources, physical and sexual assault.

Juvenile crimes are divided into different categories depending on how serious they are. Felonies are serious crimes, such as murder and sex crimes. Misdemeanors are offenses which may include petty theft. Infractions are minor offenses which are usually punishable with a fine **(Harrendorf et al., 2010)**

Institutional programs aimed at providing physical, psychological and social support for individuals and groups include camps, group homes, alternative schools and shelters. Provided within this context are educational, behavioral and psychological evaluation of institutional activities. According to experts, crime victims require restitution to restore their dignity and honor, compensation to acknowledge the trauma inflicted and bring a sense of closure, and rehabilitation to enable them to return their homes and communities with a measure of self-worth. A few methods specially scare - oriented approaches or programs that place groups of delinquents together for extended treatment- have actually worsened the behavior of participants **(UNICEF, 2009)**.

Currently, there are 37 care institutions that receive these children. However, children in conflict with the law are only institutionalized in 19 of these care institutions with only one correctional institution for male juvenile offenders aged between 15 and 18. There are three main governmental entities that operate the official juvenile justice system in Egypt. These are the Ministry of Interior that arrests and detains children at its police lockups and stations, the Ministry of Justice (MoJ) that operates courts including the Child Court and provides judges and public prosecutors who decide the fate of children arrested by the police, and the Ministry of Social Solidarity (MoSS) that operates care and correctional institutions that host these children once their fate is determined by the judges and presumably provides evaluations on the progress and the needs of children detained, arrested and institutionalized **(Mohammad, 2015).**

Delinquency prevention is the broad term of all efforts aimed at preventing children from becoming involved in criminal, or other antisocial activities. Preventive services especially the Community Health Nurse role may include activities as substance abuse education, family counseling and youth mentoring. Increasing availability and use of family planning services to reduce unwanted births are also considered as risk factors for delinquency. The most efficient interventions applied from Community Health Nurse are those that not only separating at-risk teens from anti-social peers, and place them instead with pro-social one, but also simultaneously improving their home environment by training parents with appropriate parenting styles **(Welsh, 2007).**

Management proposed protocol for youth in the juvenile correctional system will focus on delivery of medical care as health care services provided during the period of incarceration focused on the identification and treatment of immediate medical and psychiatric issues such as injury; infectious diseases; alcohol, tobacco, and other drug use/addiction, including withdrawal; psychiatric emergencies including suicidal ideation; and identification of chronic medical or mental health problems that require continuation of daily medications. In addition to a comprehensive history and physical examination, Immunizations should be provided as recommended. Additional evaluation, including for neurologic, genetic, and developmental disorders, screening of pubertal girls should include pregnancy testing. Regarding developmentally appropriate confinement facilities, children and adolescents should be housed in facilities that are able to address their specific developmental needs, treatment, and medical intervention **(American Academy of Pediatrics, 2011& Drench et al., 2012).**

The community health nurse can also participate in the parent's counsel for child who had parent and emphasize the importance of the education and child supervision. Moreover, information can be provided through mass media and in youth clubs to support the reasons for adopting and maintaining attitudes and behavior which have a positive influence on health. Health supervision and screening enable the nurse to make positive contribution to selective job placement of the child based on his age, physical, mental and medical capacities. Keeping, and reviewing child record, results of screening tests, treatment services and regular follow up will help to recognize and investigate the adverse effects imposed by work in the child's health **(Purson et al., 2010)**.

Significance of the study:

Juvenile delinquency is a critical problem that is becoming rampant in Egypt **(Ahmed et al., 2012).** Although, the exact number of juvenile delinquents is unknown, according to the Ministry of Interior

Statistics; more than 25 percent of all arrested children in Egypt in 2001 were arrested on charges of being vulnerable to delinquency. However, their number has more doubled since 2000, rising from 17.228 arrests to 32.957 in 2008 .The Egyptian juvenile justice (JJ) system classifies children in conflict with the law into two main categories: children who committed crimes, and children at risk **(Fikry et al., 2012).**

Violence is a pervasive phenomenon in the Egyptian Community and the government has done little to deal with the roots and complications of these problems. Prevailing of physical, psychological and social problems among the juvenile delinquents inside the social institutions for punishment and rehabilitation become more noticed versus the very weak reaction of the government. Additionally, the high rates of juvenile delinquency in Egypt nowadays often receive great attention from human rights and agencies committed with the performance of those activities related to health of their recovery **(Egyptian Ministry of Society Solidarity, 2012).** The community health nurse plays a pervasively crucial role in dealing with delinquency as a serious public health problem and a risk group in the community to address the problems of the juvenile delinquents and specifies the required care **(Pridmore, 2009)**.

Aim of the study:

This study aims to propose a protocol for health management of Institutionalized Juvenile Delinquents through:

- Assessing the socio-demographic characteristics of juvenile delinquents.

- Assessing the health conditions of juvenile delinquents (physical, social ,and psychological).

- Identifying the factors related to juvenile delinquency.

- Assessing the environment of the social care institutions of juvenile delinquents regarding punishment and rehabilitation activities.

- propose a protocol for health management of juvenile delinquents based on their needs

Research questions:

1. What are the health conditions of the juvenile delinquents?

2. What are the factors related to juvenile delinquency?

3. Is the social care institutions environment appropriate for the juvenile delinquents' rehabilitation?

1. Subjects and Methods:

Operational definitions:

- **Juvenile Delinquency**, also known as the **juvenile offending**, or the **youth crime**, is defined as any crime committed by children and adolescents under statutory age.

- **Juvenile Delinquent** means a person who is under age eighteen who is found to have committed a crime, street children spend most of their time in the streets, and the children ran away from their home with few links or no link with their families and who come to the institution through their family due to socioeconomic problems.

- **Social Care Institution**, also known as the **Juvenile Welfare**, means a short-term residential facility that houses youth offenders while they are awaiting

court hearings or placement in a long-term program and differs from a traditional rehabilitation program or a correctional facility for youths. **Felony** means the most serious crime, such as murder and sex crimes and the felony's punishing period is 7-25 years.

- **Misdemeanor** means a major offence which may includes forced theft and the misdemeanor's punishing period is 3-7 years.

- **Infraction** means minor offence which is usually punishable with a fine especially in females from 24hrs-3 years.

- Protocol: Is a set of "RULES" and "REGULATIONS" for sending and receiving Information , by using the standard protocols .

Research design :

A descriptive analytic study was utilized to describe the health conditions of juvenile delinquents in the social care institutions.

I. Technical Design:

Setting:

The total number of the Egyptian social care institutions were 37 and this purposive study was conducted at the 5 selected ones (El Marg institution for males with total population 1067 juvenile delinquents and El Agouza with 84 females, Kobri el Kobba with 56 females, Ain Shams with 37 females and Dar El Aman in Embaba with 34 females). Those institutions are the most crowding ones in Egypt and serve big numbers of juvenile delinquents coming from all over the country.

Sampling:

A purposive sample consisted of 318 participants (248 males, and 70 females) from the juvenile delinquents inside the 5 selected social care institutions: 248 boys from El Marg Social Care Institution for males, 32 girls from El Agoza Social Care Institution for females, 22 girls from Ain Shams Social Care Institution for females, 10 girls from Kobry El Kobba Social Care Institution for females and 6 girls from Dar El Aman Social Care Institution for females in Embaba.

Tools of data collection:

The data were collected using the three following tools:

First tool: Self-administered Questionnaire form: that was designed by the researchers after reviewing the related literature and consulting the experts, written in Arabic language to assess all the related parts:

Part I- socio-demographic characteristics of the juvenile delinquents and their families using the institutional records also: this part included 18 closed ended questions (1-18): such as age, type of crime, number of admissions, parent supervision, juvenile and parents' educational level, family residence, family crowding index, parents' marital status, parents' occupation and family monthly income.

The Family Crowding Index (F.C.I) formula adopted from **(American Association of Public Opinion Research, 2007):**

Family Crowding Index = number of persons in a household / number of rooms used for sleeping.

Scoring Design:

- Not Crowded Family (≤ 1)
- Crowded Family (> 1)
- Severely Crowded Family (> 1.5)

Part II- Past and current health history for juvenile delinquents : this part included 7 closed ended questions (1-7): such as chronic diseases, parasitic infestation, infectious diseases, road traffic accident (RTA), previous surgeries and previous hospitalization before admission and acute diseases after admission.

Part III- Child health habits and life style: this part includes 23 closed ended questions.

Child health habits: it included 16 closed ended questions (1-16): such as self use of equipments, teeth brushing, nails cut, shaving, shower, pads and shower during menstrual cycle (females), masturbation activity, starting time and age of smoking, using drugs, types of drugs, nutritional habits, snacks and type of daily nutrition.

Child life style: it included 7 closed ended questions (17-23): such as sleep pattern, sleeping problems, naps, preferable sports, weekend recreation, homosexual activities, institutions' rehabilitation activities, institutions' punish ways.

Scoring Design:

Scoring System for Child health habits and Child life style are healthy answers took "1" score and unhealthy answers took zero.

Scoring System of Juveniles' Daily Nutrition scale adopted from (Institute of Nutrition, 2006):

Scoring system was graded according to all food groups and drinks at day. Food frequency record was also used to present a more complete dietary intake pattern. The score ranged from zero to one, no = 0 & yes (daily) =1. The total score for all items related to juveniles' daily nutrition was 21 items and categorized into three levels as followings, poor nutrition (0-7 marks), normal nutrition (8-14 items), and good nutrition (15-21 items)

Part IV- Psychological assessment using self-esteem scale for children : developed by **Saleem, and Mahmood, (2011).** This part included 24 statements using 2 levels (like me / not like me).

Scoring Design:

The score ranged from zero to one, not like me = 0 & like me =1. The total score for all items related to self-esteem scale was 24 items and categorized into three levels as Low self-esteem (0-8 points), average self-esteem (9-16 points), and high self-esteem (17-24 points)

Part VI- Assessment of children social status using antisocial behavioral scale: adopted from **Burt and Donnellan , (2013)**

This part included 56 questions using 5 levels (very much / many / sometimes / rarely / never).

Scoring Design:

The score included 5 degrees ranged from zero to four, very much= 4, many= 3, sometimes= 2, rarely= 1 and never= 0. So, the maximum total degrees for the questionnaire were 283 and the minimum total degrees for the questionnaire were (56). The test measuring four dimensions were physical aggression, verbal aggression, violence and anger, (14) questions for each dimension. The total score for all items related to antisocial behavioral scale was 224

and categorized into three levels as followings:

- Low antisocial behaviors (0-112 marks)
- Average antisocial behaviors (113-164 marks)
- High antisocial behaviors (165-224 marks)

Second tool: Physical examination sheet from head to toe : this part included 9 items (1-9) constructed by **Wong et al., (2013)**: such as vital signs abnormalities, hair, eye, ear, mouth, skin, limps, body mass index including weight & height and injuries & signs of somatic abuse using weighting scale, meter, thermometer, stethoscope, sphygmomanometer.

Third tool: An observational checklist: for assessing the social care institutions environmental conditions, adopted from **Galaviz et al., (2015) :**

It comprised two main parts filled by the researchers during institution visits.

A. Institution environment:

a) Characteristics of housing: this part included 24 closed and open ended questions covering space and security, structure and material, water supply, sewage disposal, methods of disposing waste, floors, stairs, number of rooms and crowding index, kitchen, cooking facilities, lightening, ventilation and cleanliness levels. Every institution must be passing 20 points to have good environmental sanitation and if it passed less than 20 points, it has poor environmental sanitation.

Ventilation formula adopted from WHO, (2006):

Rooms (Classes) Ventilation= 20% from the total distance of room (Classes).

Scoring Design: Total score was categorized into either Good ventilation (> or =20%) or Poor

Ventilation (< 20%).

b) Room's furniture: it included furniture such as cupboard, bed, desk, chair, table and waste basket. Each institution's room must have 4 items at least according to children needs in room.

c) Safety measures: as fire precaution, electricity precaution and indoor accident precaution. It contained 3 items and all three items should to be found and worked, scored found (1), not found (0) marks.

d) Recreational equipments: as private club for children, special place for meetings and parties, television, computer, library and telephone devoted for child use. It contained 6 items scored, unsuitable (1-3), and suitable (4-6).

B. Institution health clinic: covering the human resources and non human resources available in institution health clinic such as:

a) Human resources (institution's health team):

I. Medical staff: as physician, dentist, orthopedic doctor, ophthalmologist and nurse. It composed of 5 staff members scored, insufficient (1-3), sufficient (4-6) with present (1) absent (0) marks.

II. Paramedical staff: as psychiatrist, psychologist, nutritionist and social worker. It composed of 4 institution

members scored, present (1), absent (0) marks.

III. Medical services: as ECG, urine and blood analysis for sugar and CBC, periodical check up for all children, laboratory for screening test, facilities and equipments for first aid and referral for specific hospitals. It composed of 5 closed and open ended questions, scored incomplete (1-2), complete (3-5).

b) Non human resources as facilities, equipments and physical examination included:

I. Equipments such as:

a) Physical examination equipments as: weighing scale, meter for measuring height, tongue depressor, stethoscope, thermometers, sphygmomanometer, thermometer disinfectant tray, torch, hammer, round basin, kidney basin and iodine bowl. It contained 13 items scored, insufficient (1-6), and sufficient (7-13).

b) First aid equipments as: scissors, dressing forceps, handling forceps, tourniquet, splint (metal, yucca), ice bag, hot water bottle, drum for sterile equipments, drum for sterile gauze and cotton sponge and instruments tray. It contained 10 items scored, insufficient (1-5), and sufficient (6-10).

II. Facilities: as nursing office, telephone, bed, lavatory facilities with soap dispenser and disposable towel, proper lightening and ventilation, locked storage for medications, screening environment, locked files cabinets or drawers for storage of health records and side rails rounded all the nursing office walls. It contained 9 items, scored insufficient (1-4), sufficient (5-9).

III. Supplies & disinfectant solutions:

a) Dressing supplies: as roller bandage in different size and triangular bandage dressing adhesive tape, sterile gauze in different sizes, absorbent cotton rolls and syringes. It contained 6 items, scored insufficient (1-3), sufficient (4-6).

b) Bed making supplies: as pillows, mattress covered with mackintosh, linens, spread sheet and blanket. It contained 4 items, scored insufficient (1-2), sufficient (3-4).

c) Disinfectant solutions as: tincture of green soap, savlon, iodine tincture and alcohol. It contained 4 items, scored insufficient (1-2), sufficient (3-4).

IV. Emergency medications as: aspirin, paracetamol, entocid, antispasmodics tablets and drops, anti-emetics tablets and drops, anti-allergic, ointments for burns, eye drops, nasal drops, Avil ampoules, Decadron vials, Adrenaline ampoules and Tetanus toxoid ampoules . It contained 15 items scored, insufficient (1- 7), sufficient (8-15).

II. Operational Design:

Preparatory Phase:

A review of literature was done regarding current and past available literature, covering the various aspects of the problem, using text books, articles, magazines and internet search. This was necessary for the researchers to get aquatinted with, and oriented about aspects of the research problems, as well as to assist in development of data collection tools and the proposed protocol for health management of such group of the study subject.

Ethical consideration:

All ethical considerations were considered for ensuring the juveniles' privacy and confidentiality of the collected data during the study. The purpose and nature of the study were explained for the participants and oral agreement was taken to gain their participation after being informed that each study subject is free to withdrawal at any time through the study. All selected study sample agreed to participate in the study and they were assured that the study would posed no risks or hazards on their social, psychological or physical health.

Pilot Study:

A pilot study was conducted at the beginning of the study on 32 participants (10% of the total study subjects) to investigate the feasibility of data collection tools, their content, validity, clarity and simplicity. Some questions were added (e.g. child health habits and child health history). It took about one month from July to August to validity and reliability. Subjects included in the pilot study were excluded from the actual study sample.

Field work:

The actual process of data collection was carried out in the period from September to November 2013 two days weekly nearly about 5 hours daily (Wednesday and Friday) in order to observe children in different situation. The researchers interviewed themselves to the institutions' administrators and the other institutional team work that will help them in data collection to save the time and to also gain the trust of children. The researchers explained the aim of the study to all of them and then distributed the questionnaire sheet after clear explaining the way to fill it out. The self administered tools took about maximum 2 hours for all the children and the physical assessment tool took about 15 minutes for each child. Physical assessment through observation and examination. Observational checklist for each institution was conducted for observing buildings, environmental sanitation, safety measures, health clinics, classes, kitchens and the crowding index.

Administrative Design:

The study was carried out with co-operation of the different levels of authority in the Ministry of Society Solidarity. The General Office of Social Defense, the Ministry of Interior and the directors of the selected social care institutions where the study was conducted. A written permission for data collection from social care institutions was obtained from the director of the General Office of Social Defense upon submission of formal letter from the director of the general security office in the Ministry of Society Solidarity upon the main submission of formal letter from the Dean of the Faculty of Nursing, Ain Shams University to different selected social care institutions, requesting their approval for conducting this study from these institutions.

Statistical design:

Data was analyzed using the Statistical Package for Social Science (SPSS) version 20. Qualitative data was presented as number and percent. Relations between different qualitative variables were tested using Chi-square test (X^2). Probability (p-value) < 0.05 was considered significant and < 0.001 was considered highly significant.

Result:

Table 1: Distribution of the juvenile delinquents according to their socio-demographic characteristics and the institution's data records (n=318).

Items	Males N=248		Females N=70		Total N=318		X^2	P
	N	%	N	%	N	%		
Juvenile age							6.100 df=3	P>0.05
15-16 years	110	44.4	38	54.3	148	46.6		
17-18 years	138	55.6	32	45.7	170	53.4		
Type of crime committed &punishing period							3.287 df=2	P>0.05
Infraction(<1-2 years)	90	36.3	70	100	160	50.3		
Misdemeanor(3-7 years)	116	46.8	0	0	116	36.5		
Felony(>7 years)	42	16.9	0	0	42	13.2		
Institutionalizing duration since admission							1.683 df=2	P>0.05
> 3 months – 3 years	158	63.7	36	51.5	194	61		
> 3 year - 7 years	53	21.4	29	41.4	82	25.8		
> 7 years	37	14.9	5	7.1	42	13.2		
Number of admissions							0.199 df=1	P>0.05
First time	243	98	60	85.7	303	95.3		
More than one time	5	2	10	14.3	15	4.7		
Institutionalized brothers or sisters	5	2	0	0	5	1.6	0.957 df=1	P>0.05
Juvenile ranking in family							0.037 df=2	P>0.05
The eldest	82	33.1	32	45.7	114	35.8		
The middle	132	12.5	31	44.3	163	51.3		
The youngest	34	13.7	7	10	41	12.9		
Parent supervision							3.944 df=3	P>0.05
Both parents	154	62.1	41	58.6	195	61.3		
Single parent	72	29	15	21.4	87	27.4		
Relative	14	5.7	6	8.6	20	6.3		
No supervision	8	3.2	8	11.4	16	5		
Juvenile educational level (after admission)							4.657 df=4	P>0.05
University	2	0.8	2	2.9	4	1.3		
Secondary school (technical/ general)	10	4	5	7.1	15	4.7		
Preparatory school	8	3.2	2	2.9	10	3.1		
Primary school	10	4	26	37.1	36	11.3		
No/ stop education	194	78.2	59	84.3	253	79.6		
Cause of leaving school before admission	**N=194**	**78.2**	**N=59**	**84.3**	**N=253**	**79.6**	9.815 df=6	P>0.05
Institutional admission	71	36.6	0	0	71	28.1		
Going to work	42	21.6	36	61	78	30.8		
Hating school	62	32	20	33.9	82	32.4		
Family desire	19	9.8	3	5.1	22	8.7		
Family residence							4.661 df=2	P>0.05
Urban	53	21.4	28	40	81	25.5		
Rural	117	47.2	9	12.9	126	39.6		
Slum areas	78	31.4	33	47.1	111	34.9		
Family Crowding Index							6.170 df=2	P<0.05
Severely crowded	136	54.8	45	64.3	181	56.9		
Crowded	59	23.8	18	25.7	77	24.2		
Not crowded	53	21.4	7	10	60	18.9		
Family monthly income							5.454 df=2	P>0.05
Sufficient and save	42	17	11	15.7	53	16.7		
Sufficient	103	41.5	30	42.9	133	41.8		
Insufficient	103	41.5	29	41.1	132	41.5		

Not Significant *P >0.05* ***Significant*** *P <0.05* ***Highly Significant*** *P<0.001*

Table (1) shows that 53.4% of the total sample of the juvenile delinquents aged 17-18 years. Regarding the crime committed by the juveniles, 46.8% of males were misdemeanor and 100% of females were infarction. The table also shows that 98% of males compared with 60% of females were admitted for the first time. This table also detects that 79.6% from the total sample left schools 32.4% out of them left schools because they hated it and 8.7% left schools because of their family desire. All items of this table illustrate insignificant differences between males and females at $p > 0.05$. Regarding juveniles' family residence 39.6% of them were in rural followed by 34.9% was in slum areas. Regarding the Family Crowding Index, 56.9% were living in severely crowded homes with a statistical significant difference between males and females. The family monthly income, 16.7% from the total sample had sufficient income and save while, 41.5% had insufficient income.

Table 2: Distribution of the juvenile delinquents according to their health habits during institutionalization (n=318).

Items	Males N=248		Females N=70		Total N=318		X^2	P
	N	%	N	%	N	%		
Self use of equipments	169	68.1	37	52.9	112	35.2	0.147 df=1	P>0.05
Teeth brushing Daily	79	31.9	32	45.7	111	34.9		
Cutting/cleaning nails(hands/feet)							3.427 df=2	P>0.05
Weekly	248	100	58	82.9	306	96.2		
Sometimes	0	0	12	17.1	12	3.8		
Taking complete shower							7.687 df=1	P<0.05
Daily	248	100	54	77.1	302	95		
Sometimes	0	0	16	22.9	16	5		
Shaving pubic hair							0.072 df=1	P>0.05
Monthly	196	79	31	44.3	227	71.4		
Sometimes	52	21	39	55.7	91	28.6		
Using pads during menstrual cycle (females)							7.714 df=1	P<0.05
Healthy pads(disposable)	0	0	63	90	63	19.8		
Unhealthy(piece of cloth)	0	0	7	10	7	2.2		
Taking complete shower during menstrual cycle (females)	0	0	63	90	63	19.8		
Practicing masturbation							5.498 df=1	P<0.05
Never	119	48	43	61.4	162	50.9		
Sometimes	129	52	27	38.6	156	49.1		
Homosexual activities							0.354 df=1	P>0.05
Never	189	76.2	60	85.7	249	78.3		
Sometimes	59	23.8	10	14.3	69	21.7		
Starting time of smoking	**N=234**	**94.4**	**N=31**	**44.3**	**N=265**	**83.3**	0.116 df=1	P>0.05
Before institutionalization	202	86.3	31	100	233	88		
After institutionalization	32	13.7	0	0	32	12		
Starting age of smoking	**N=234**	**94.4**	**N=31**	**44.3**	**N=265**	**83.3**	0.112 df=1	P>0.05
10-15 years old or more	146	62.4	31	100	177	66.8		
Less than 10 years	88	37.6	0	0	88	33.2		
Using drugs	**N=234**	**94.4**	**N=31**	**44.3**	**N=265**	**83.3**	0.434 df=2	P>0.05
Never	33	14.1	4	13	37	14		
Sometimes	116	49.6	27	87	143	54		
Always	85	36.3	0	0	85	32		
Types of using drugs	N=201	81	N=27	38.6	N=228	71.7	6.692 df=6	P>0.05
Tablets	18	7.7	2	6.5	20	7.5		
Alcohol/glue	13	5.6	2	6.4	15	5.6		
Hashish	94	40.2	17	54.8	111	41.9		
Banjo	31	13.2	6	19.3	37	14		
Afion	29	12.4	0	0	29	11		
Cocaine	16	6.8	0	0	16	6		
Daily snacks between meals	206	83.1	58	82.9	264	83	0.161 df=1	P>0.05
Types of nutrition per day							0.379 df=2	P>0.05
Good nutrition	248	100	33	47.1	281	88.4		
Normal nutrition	0	0	24	34.3	24	7.5		
Poor nutrition	0	0	13	18.6	13	4.1		
Nutritional habits Eat regular 3 meals	248	100	51	72.9	299	94	1.553 df=1	P>0.05

Not Significant P >0.05 **Significant** P <0.05 **Highly Significant** P<0.001

Table (2) displays that 35.2% from the total sample were using their self equipments, 65.1% were not brushing their teeth and 96.2% were cutting & cleaning their hands and feet nails daily. Regarding the complete shower, 95% were used to take daily shower with a statistical significant difference between males and females and 71.4% from the total sample were shaving their pubic hair monthly. The table shows that 90% of females were using disposable pads for the menstrual cycle. 38.6% were sometimes practicing masturbation with a statistical significant difference between males and females. Table also shows that 14.3% were sometimes practicing homosexual activities. According to smoking habits 83.3% were smokers, 88% out of them started smoking before institutionalization, and 66.8% of them started smoking at age 10-15 years. Regarding using drugs, 54% of the smokers juvenile delinquents were sometimes using drugs and 41.9% of drug users were using hashish. Regarding the nutritional habits, 94% from the total sample were eating their regular 3 meals, 83% were taking snacks between meals and 88.4% had good nutrition.

Table 3: Distribution of the juvenile delinquents according to their life style including the institutions' punishing ways and rehabilitation activities during institutionalization (n=318).

Items	Males N=248		Females N=70		Total N=318		X^2	P
	N	%	N	%	N	%		
Having regular Sleep pattern at night	124	50	42	60	166	52.2	0.073 df=2	P>0.05
Having sleeping problems	**N=103**	**41.5**	**N=49**	**70**	**N=152**	**47.8**		
Insomnia	65	26.2	31	44.3	96	30.2		
Nightmares	22	8.9	8	11.4	30	9.4	3.809 df=4	P>0.05
Speaking during sleep	10	4	7	10	17	5.3		
Walking during sleep	6	2.4	3	4.3	9	2.8		
Taking nap(at day)	0	0	64	91.4	64	20.1	3.710 df=2	P>0.05
Practicing daily exercises	248	100	70	100	318	100		
Doing weekly preferable sports	173	69.8	34	48.6	207	65.1	11.599 df=3	P<0.05
spending weekend recreation								
Sometimes outside institution	0	0	26	37.1	26	8.2	43.009 df=1	P<0.001
Always inside institution	248	100	44	62.9	292	91.8		
Practicing homosexual activities								
Never	189	76.2	60	85.7	249	78.3	0.354 df=1	P>0.05
Sometimes	59	23.8	10	14.3	69	21.7		
Following Institutions' rehabilitation activities								
Agricultural activity	102	41.1	0	0	102	32.1		
Carpentry activity	132	53.2	0	0	132	41.5	8.197 df=6	P<0.05
Fine arts	29	11.7	9	12.9	38	11.9		
Cooking activity	0	0	39	55.7	39	12.3		
Sewing & embroidery activity	0	0	45	64.3	45	14.2		
Institutions' punishing ways								
No punishment	104	42	45	64.3	149	46.9		
No relatives' visits	42	16.9	10	14.3	52	16.3	3.790 df=4	P>0.05
No pocket money	39	15.7	6	8.6	45	14.1		
Over institutional duties	53	21.4	8	11.4	61	19.2		
Shaving hair(females)	0	0	11	15.7	11	3.5		

N.B: "Responses weren't mutually exclusive"

Not Significant *P >0.05* ***Significant*** *P <0.05* ***Highly Significant*** *P<0.001*

Table (3) demonstrates that 52.2% from the total study sample had regular sleep pattern at night 30.2% had insomnia and 2.8% were walking during sleep. This table revealed that 79.9% from the total sample were not taking any naps at day, 100% were doing the daily morning exercises and 65.1% from the total sample practiced their weekly preferable sports with a statistical significant difference between males and females. Regarding the weekend recreation, 91.8% were always spending their weekend inside the institution with a highly statistical significant difference between males and females. According to the institution's rehabilitation activities record, 41.5% practiced carpentry activities with a statistical significant differences between males and females, 11.9% practiced fine arts activities and 19.2% had over duties as an institutional punishing way.

Table 4: Distribution of the juvenile delinquents' past health history related to the chronic diseases, parasitic infestation and infectious diseases (n=318).

Items	Males N=248		Females N=70		Total N=318		X^2	P
	N	%	N	%	N	%		
Chronic diseases	**N=64**	**25.8**	**N=48**	**68.6**	**N=112**	**35.2**		
Allergy	47	19	35	50	82	25.8		
Rheumatic diseases	4	1.6	8	11.4	12	3.8		
Cardiovascular diseases	4	1.6	2	2.9	6	1.9	0.069 df=1	P>0.05
Diabetes mellitus	2	0.8	0	0	2	0.6		
Hepatic diseases	2	0.8	0	0	2	0.6		
Piles & hernia Problems	5	2	3	4.3	8	2.5		
Parasitic infestations	**N=14**	**5.6**	**N=15**	**21.4**	**N=29**	**9.1**		
Bilharzias	2	0.8	0	0	2	0.6		
Worm a scars	5	2	2	2.9	7	2.2	1.826	P>0.05
Enterobiasis Pin Worm	7	2.8	3	4.3	10	3.2	df=1	
Lice/ nits	0	0	10	14.3	10	3.1		
Infectious diseases	**N=88**	**35.5**	**N=34**	**48.6**	**N=122**	**38.4**		
Sexual Transmitted Diseases(STD) (syphilis & gonorrhea)	0	0	3	4.3	3	0.9		
Scabies	50	20.2	15	21.4	65	20.4	2.530 df=1	P>0.05
Tenia/ tenia capitis	38	15.3	13	18.6	51	16		
Road Traffic Accidents (RTA)	120	48.4	36	51.4	156	49.1	5.498 df=1	P<0.05
Previous surgeries	**N=75**	**30.2**	**N=26**	**37.1**	**N=101**	**31.8**		
Maxillofacial	7	2.8	3	4.3	10	3.1		
Tonsillectomy	24	9.7	8	11.4	32	10.1		
Appendectomy	16	57.1	4	5.7	20	6.3	2.811	P>0.05
Orthopedic	24	9.7	6	8.6	30	9.4	df=1	
Plastic surgeries	4	1.6	2	2.9	6	1.9		
Abortion/ D&C surgeries (females)	0	0	3	4.3	3	0.9		
Previous hospitalization	84	33.9	32	45.7	116	36.5	3.305 df=1	P>0.05

Not Significant *P >0.05* ***Significant*** *P <0.05* ***Highly Significant*** *P<0.001*

Table (4) reveals that chronic diseases especially different types of allergy were common among 74.3% of females and 39.3 % of all children. Regarding parasitic infestation, 9.1% of juveniles suffered parasitic infestation, and 14.3% of females suffered lice & nits. Infectious diseases among juvenile delinquents were

38.4%, sexual transmitted diseases in females were 4.3% and scabies among all children were 20.4% followed by tenia & tenia capitis were 16%. Also this table elaborates that 49.1% from the total study sample had road traffic accidents before admission with a statistical significant differences between males and females. Previous surgeries among children were 31.8%, 10.1% tonsillectomy, 9.4% orthopedic, 6.3% appendectomy, 1.9% plastic surgeries and 0.9% abortion and 36.5% had previous hospitalization.

Figure (1): Distribution of the juvenile delinquents according to their health status after institutionalization (n=318).

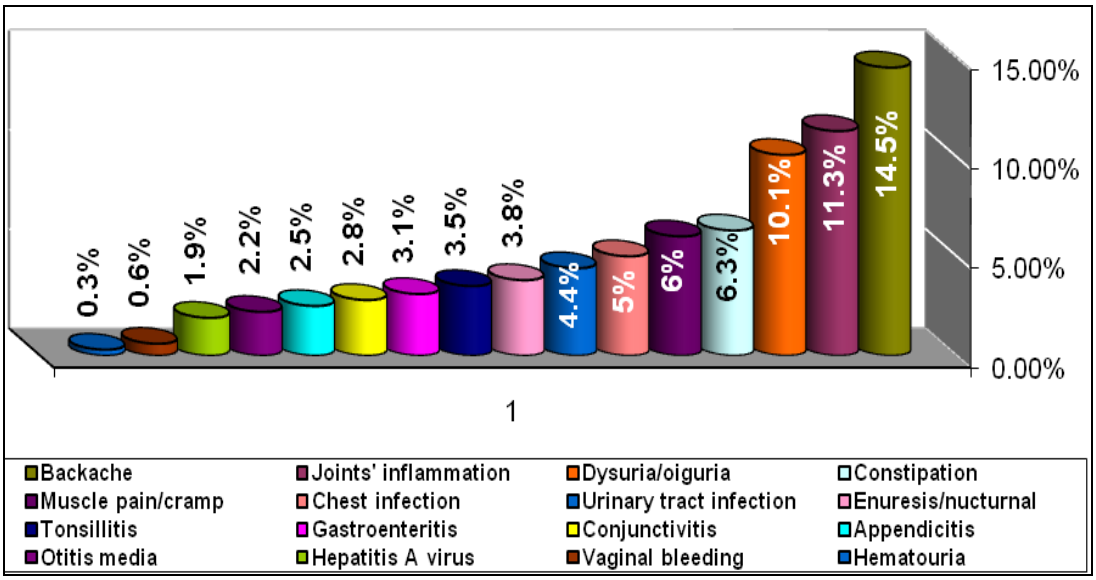


Figure (1) shows that 14.5% of juveniles complain backache, 11.3% complains joints' inflammation, and 10.1% complains dysuria and oliguria, 5% chest infection, 3.1% gastroenteritis, 2.5% appendicitis, 1.9% hepatitis A virus and 0.3% hematouria.

Table (5): Distribution of the juvenile delinquents according to their physical examination (n=318).

Items	Males N=248		Females N=70		Total N=318		X^2	P
	N	%	N	%	N	%		
Vital signs								
Hyperthermia	25	10.1	13	18.6	38	11.9		
Bradycardia	11	4.4	7	10	18	5.7	3.209 df=4	P>0.05
Tachycardia	27	10.9	12	17.1	39	12.2		
Tachypnea	21	8.5	11	15.7	32	10.1		
Hypotension	18	7.3	9	12.9	27	8.5		
Hypertension	4	1.6	2	2.8	6	1.9		
Hair								
Hair dandruff	29	11.7	18	25.7	47	14.8	3.174 df=1	P>0.05
Alopecia	6	2.4	2	2.9	8	2.5		
Lice/ nits	0	0	10	14.3	10	3.1		
Eye								
Wearing glasses	18	7.2	7	10	25	7.8		
Squint	2	0.8	2	2.9	4	1.3	0.015 df=1	P>0.05
Eye discharges	57	23	31	44.3	88	27.7		
Eye inflammation/ redness	30	12	19	27.1	49	15.4		
Ear								
Hearing impairment	6	2.4	3	4.3	9	2.8	2.749 df=1	P>0.05
Ear discharges/ excessive wax	2	0.8	22	31.4	24	7.5		
Mouth								
Dental caries/ decayed	75	30.2	26	37.1	101	31.8	1.484 df=1	P>0.05
Missing teeth	22	8.9	7	10	29	9.1		
Bleeding gum	33	13.3	12	17.1	45	14.2		
Skin								
Skin itching	10	4	3	4.3	13	4.1		
Warts/ skin tags	45	18.2	5	7.1	50	15.7		
Eczema	10	4	3	4.3	13	4.1	4.780 df=1	P<0.05
Scabies	28	11.3	4	5.7	32	10.1		
Tenia/ tenia capitis	17	6.9	4	5.7	21	6.6		
Abrasions between toes	40	16.1	27	38.6	67	21		
Limbs								
Limbing	9	3.6	5	7.1	14	4.4	5.593 df=1	P<0.05
Amputation	3	1.2	1	1.4	4	1.3		
Body Mass Index								
Under weight (> 18.5)	8	3.2	4	5.7	12	3.8	0.496 df=1	P>0.05
Normal weight (< 18.5-25)	227	91.5	51	72.9	278	87.4		
Over weight (< 25-30)	11	4.4	13	18.6	24	7.5		
Obesity (< 30-40)	2	0.8	2	2.8	4	1.3		
Injuries and signs of somatic abuse								
Wounds	115	46.4	48	68.6	163	51.3		
-Face/head	32	12.9	14	20	46	14.5	0.608 df=1	P>0.05
-Upper limbs	20	8	10	14.3	30	9.4		
-Trunk	18	7.3	6	8.6	24	7.5		
-Lower limbs	45	18.1	18	25.7	63	19.8		

Items	Males N=248		Females N=70		Total N=318		X^2	P
	N	%	N	%	N	%		
Burns' signs	82	33.1	29	41.4	111	34.9	1.585 df=1	P>0.05
-Face/head	17	6.9	4	5.7	21	6.6		
-Upper limbs	23	9.3	10	14.3	33	10.4		
-Trunk	14	5.6	7	10	21	6.6		
-Lower limbs	28	11.3	8	11.4	36	11.3		
Eye/ear/nose/maxillas injuries	8	3.2	6	8.6	14	4	0.015 df=1	P>0.05
Nerve/vein/artery cut	10	4	14	20	24	7.5		
Head injuries (hemorrhage/thrombosis)	4	1.6	2	2.9	6	1.9		
Fractures	120	48.4	41	58.6	161	50.6	2.265 df=1	P>0.05
-Skull/maxillofacial bones	8	3.2	5	7.1	13	4.1		
-Upper limbs	54	21.8	17	24.3	71	22.3		
- Ribs	11	4.4	3	4.3	14	4.4		
-Pelvis& lower limbs	47	19	16	22.9	63	19.8		

N.B: "Responses weren't mutually exclusive"

Not Significant *P >0.05* ***Significant*** *P <0.05* ***Highly Significant*** *P<0.001*

Table (5) illustrates that 12.2% from the total study sample suffered tachycardia, 11.9% hyperthermia, 10.1% tachypnea and 8.5% hypertension. Hair problems were 20.4% from the total study sample and 14.8% hair dandruff. Eye problems among juvenile delinquents were 52.2%, eye discharges were 27.7%. Ear problems were 10.4% ear discharges and wax was 7.5%. Mouth problems were 55% and 31.8% suffered dental caries and decayed. Regarding skin problems were 61.6%, the higher percent were 21% for abrasions between toes followed by 15.7% warts and skin tags with a statistical significant differences between males and females. Limbs problems among children were 5.6% , the higher percent 4.4% limping with statistically significant difference between males and females. Regarding juveniles' body mass index, 87.4% had normal weight, 3.8% had under weight and 1.3% were obese. They suffer from injuries and signs of somatic abuse as51.3% wounds, 34.9% burns, and 50.6% fractures.

Table (6): Distribution of the juvenile delinquents according to their psychological and social health status (n=318).

Items	Males N=248		Females N=70		Total N=318		X^2	P
	N	%	N	%	N	%		
Psychological health status								
Self-esteem							0.640 df=2	P>0.05
High self-esteem	69	27.8	25	35.7	94	29.6		
Average self-esteem	104	42	16	22.9	120	37.7		
Low self-esteem	75	30.2	29	41.4	104	32.7		
Social health status (Antisocial behaviors)								
Physical aggression								
Low physical aggression	97	39.1	31	44.2	128	40.3	6.602 df=2	P<0.05
Average physical aggression	87	35.1	16	22.9	103	35.1		
High physical aggression	64	25.8	23	32.9	87	27.4		
Verbal aggression								
Low verbal aggression	111	44.8	28	40	139	43.7	0.538 df=2	P>0.05
Average verbal aggression	62	25	21	30	83	26.1		
High verbal aggression	75	30.2	21	30	96	30.2		
Violence								
Low violence	83	33.5	19	27.1	102	32.1	5.131 df=2	P>0.05
Average violence	70	28.2	19	27.1	89	28		
High violence	95	38.3	32	45.7	127	39.9		
Anger								
Low anger	82	33.1	14	20	96	30.2	4.791 df=2	P>0.05
Average anger	46	18.5	20	28.6	66	20.8		
High anger	120	48.4	36	51.4	156	49.1		
General antisocial behaviors								
Low antisocial behaviors	37	14.9	9	12.9	46	14.4	4.364 df=2	P>0.05
Average antisocial behaviors	109	44	27	38.5	136	42.8		
High antisocial behaviors	102	41.1	34	48.6	136	42.8		

Not Significant P >0.05 Significant P <0.05 Highly Significant P<0.001

Table (6) illustrates that the anti-social behaviors of the juvenile delinquents were 49.1% high anger followed by39.9% high violence, 42.8% high antisocial behaviors, with no statistical significant difference between males and females at **P >0.05.**

Table (7): Distribution of the institutions environment according to their safety measures and sanitation (n=5).

Items	Total N=5	
	N	%
Institutions security (Insufficient)	4	80
Safety measures (Not found)	5	100
Rooms' Crowding Index(CI)		
Not crowded	3	60
Crowded	1	20
Severely crowded	1	20
Classes' Crowding Index(CI) Not crowded	4	80
Juvenile room's furniture (Insufficient)	3	60
Lightening (Natural & Artificial) (Good)	5	100
Ventilation (Natural & Artificial) Good	5	100
Water supply (Present)	5	100
Sewage disposal (Present)	5	100
Refuse disposal collection		
Weekly	4	80
Irregular	1	20
Kitchen services (Good)	3	60
Stairs (Safe)	4	80
Leisure equipments Not available	3	60
General cleanliness level Suitable	5	100
General environmental sanitation Sanitary	5	100

Table (7) illustrates that 80% of institutions had insufficient security, 100% hadn't safety measures. Regarding institutional rooms' crowding index, 60% were not crowded and 80% of classes were not crowded. Juvenile rooms' furniture was 60% insufficient. 100% of institutions had good natural & artificial lightening and ventilation. Water supply was 100% present inside the institutions. Sewage disposal was 100% present and refuse disposal collection was 80% good. Kitchen services were 60% good and stairs were 80% safe. Regarding the institutions' leisure equipments, 60% were not available, cleanliness levels and sanitation were 100% suitable in all institutions.

Figure (2): Distribution of the institutions according to their Insufficient health clinic conditions (n=5).

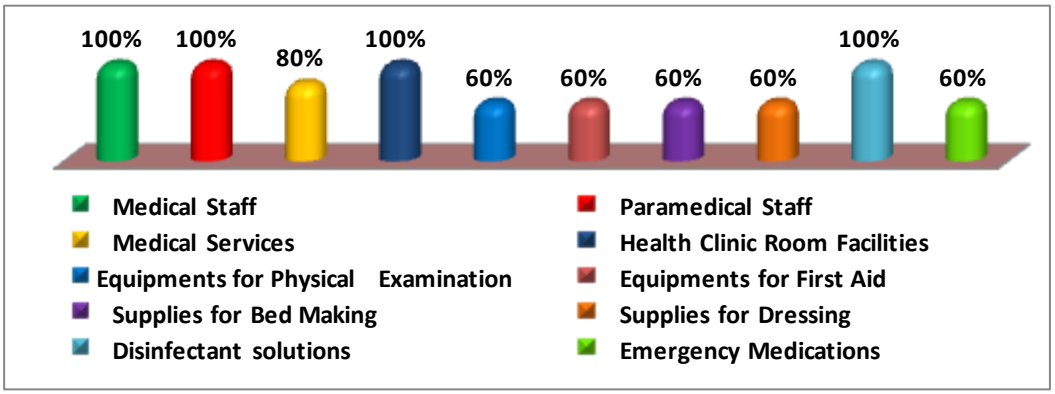


Figure (2) displays that medical and paramedical staff in the institutions' health clinic was 100% insufficient in all health clinics, while the medical services were 80% incompletely applied. The facilities of the health clinic rooms were 100% insufficient. Equipments needed for physical examination, first aid, bed making and dressing were 60% insufficient. Disinfectant solutions were 100% insufficient in all health clinics. Emergency medications were 60% insufficient.

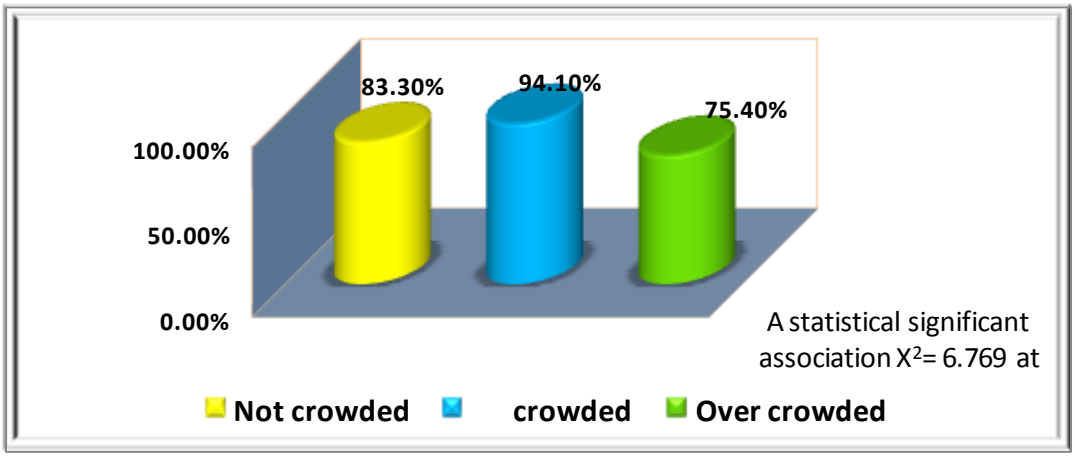
Table (8): Relation between the juvenile delinquents' type of crime and their psychological and social Health status. (n=318).

Items	Infraction (N=112)		Misdemeanor (N=116)		Felony (N=90)		Total (N=318		X^2	P
	N	%	N	%	N	%	N	%		
Psychological health status										
Self-esteem									7.627 df=4	P >0.05
High self-esteem	38	10.7	32	27.6	24	26.7	94	29.6		
Average self-esteem	31	27.7	51	44	38	42.2	120	37.7		
Low self-esteem	43	61.6	33	28.4	28	31.1	104	32.7		
Social health status										
Physical aggression									4.253 df=4	P >0.05
Low physical aggression	37	33	53	45.7	38	42.2	128	40.2		
Average physical aggression	39	38.4	35	30.2	29	32.2	103	32.4		
High physical aggression	36	28.6	28	24.1	23	25.6	87	27.4		
Verbal aggression									2.467 df=4	P >0.05
Low verbal aggression	43	38.4	56	48.3	40	44.4	139	43.7		
Average verbal aggression	33	29.5	28	24.1	22	24.4	83	26.1		
High verbal aggression	36	32.1	32	27.6	28	31.2	96	30.2		
Violence									1.609 df=4	P >0.05
Low violence	36	32.1	36	31	30	33.3	102	32.1		
Average violence	28	25	37	31.9	24	26.7	89	28		
High violence	48	42.9	43	37.1	36	40	127	39.9		
Anger									10.030 df=4	P <0.05
Low anger	24	21.4	40	34.5	32	35.6	96	1.6		
Average anger	20	17.9	27	23.3	19	21.1	66	73.3		
High anger	68	60.7	49	42.2	39	43.3	90	28.3		
General antisocial behaviors									18.136 df=4	P<0.001
Low antisocial behaviors	14	12.5	12	10.3	20	22.2	46	14.1		
Average antisocial behaviors	37	33	64	55.2	35	38.9	136	42.8		
High antisocial behaviors	61	54.5	40	34.5	35	38.9	136	42.8		

Not Significant P >0.05 **Significant** P <0.05 **Highly Significant** P<0.001

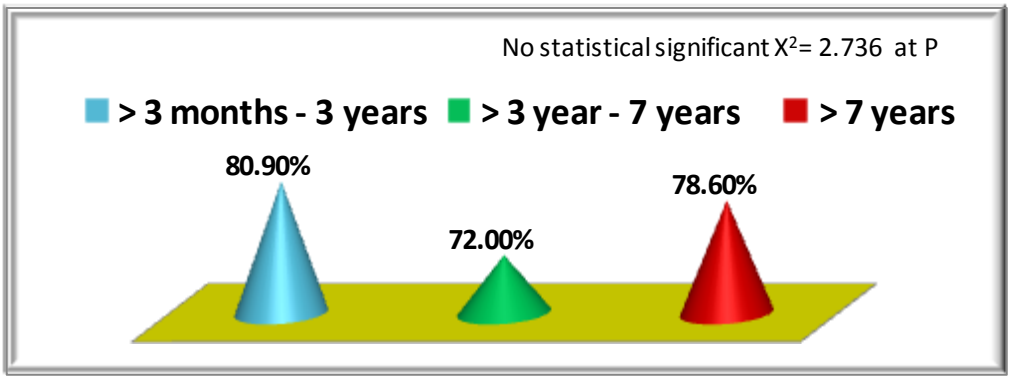
Table (8) demonstrates that there was no statistical significant association between the juvenile delinquents' self-esteem, physical, verbal aggression, violence and their type of crimes , where X^2= **7.627, 4.253, 2.467 & 1.609**, respectively at **P >0.05**. Meanwhile, there was a statistical significant association between the juvenile delinquents' anger and misdemeanor type of crimes, where X^2= **10.030**, respectively at **P <0.05**. Also this table elaborates that there is a highly statistical significant association between the juvenile delinquents' crimes and high / average antisocial behaviors and misdemeanor type of crime, where X^2= **18.136**, respectively at **P <0.001**.

Figure(5): Relation between the institutional rooms crowding index and the juvenile delinquents' Current health problems. (n=318).



Figure(5): Illustrates that there was a statistical significant association between the juvenile delinquents' institutional rooms crowding index and their current health problems, where X^2= **6.769** at **P <0.05.**

Figure(6): Relation between the duration of juvenile delinquents in institution and their Current health problems. (n=318).



Figure(6): Elaborates that there was no statistical significant association between the juvenile delinquents' institutional duration since admission and their current health problems, where $\mathbf{X^2}$**= 2.736** at **P >0.05.**

Discussion :

Juvenile delinquency is defined as any crime committed by children and adolescents under statutory age between 7 to 18 years ***(Siegel and Bardon, 2011)***. Prevailing of physical, psychological and social problems among the juvenile delinquents inside the social care institutions for punishment and rehabilitation become more noticed versus the very weak reaction of the Egyptian government. Additionally, the high rates of juvenile delinquency in Egypt nowadays often receive great attention from human rights and agencies committed with the performance of those activities related to health of their recovery ***(Egyptian Ministry of Society Solidarity, 2012).***

Regarding the age of juvenile delinquents, nearly half of the study sample was in the age group 15-16 years and the males more than half in age group 17-18 years ***(Table 1)***. This study was in agreement with ***Saiegh, (2009)*** who reported that two thirds of his study sample was aged 17-18 years. This study also agrees with the study of ***Taha, (2013)*** who conducting a study on the relation between the psychological problems and the maladaptive antisocial behaviors of the juvenile delinquents in greater Cairo and reported that three quarters of sample were males compared with one quarter of the sample were females. The researchers found these ages could be due to many adolescents in these ages seek to define their identity and delinquency may provide a way to do that.

This study showed that the order of the juvenile crimes were infraction crimes in the first stage with half of the study sample, misdemeanor crimes in the second stage with two fifth of the total sample and felony crimes in the third stage with one fifth of the study sample ***(Table 1)***. This result was contradicted with ***Owein, (2009)*** who conducting a study in Amman and reported that half of the study sample were committed in misdemeanor crimes as forced theft or petty theft crimes and one quarter of the study sample were committed in felonies crimes as murder and sexual crimes. These discrepancies might be due to differences in the country culture.

In relation to number of admissions to the institution, the result of this study found that a majority of the study sample admitted to an institution for the first time ***(Table 1)*** and this result contradicted with the study of ***Abdou et al., (2007)*** in Egypt and the study of ***Seck, (2007)*** at Mandel School of Applied Social Science at Case Western Reverse University who reported that all juveniles in the sample were admitted to an institution recurrently more than one time or at least for the second time due to their low socioeconomic status of their family. This study showed that the majority of the study sample hadn't any institutionalized brothers or sisters. This study was contradicted with ***Saiegh, (2009***) who conducting a study in Qatar and reported those two quarters of the study sample had institutionalized fathers, brothers or sisters.

Regarding the juvenile delinquents ranking in family, more than half of the total study sample were the middle child and about two fifth of the total sample were the eldest ***(Table 1)***. This study was contradicted with ***Owein, (2009)*** who conducting a study in Amman and reported that two thirds of the study sample was the eldest but, one quarter were the youngest. Concerning parent supervision, findings of this study detected that about two thirds of the study sample were living under their both parents and

about one quarter of the study sample were living under one parent supervision ***(Table 1)***.This result was contradicted with ***Abed, (2010)*** who conducted study in Ghazza on care of institutionalized delinquents and found that nearly half of the study sample were homeless children; about one quarter of his total sample were living with one parent and about one fifth were living under their parents' supervision. The researchers found that this result could be due to Palestinian population disaster events with Israel.

Regarding the educational level of the juvenile delinquents, the results of this study found the majority of the study sample left their schools before admission and the major cause for leaving school was hating schools and going to work ***(Table 1)***. These results agreed with study conducted in Faculty of Medicine, Cairo University by ***Fakher, (2008***) who reported that the majority of the study sample left their school before admission because of the low socioeconomic status of their families obliged them to d go to work.

Regarding the juveniles' family residence, the result of this study detected that the majority of the sample were living in rural and slum areas but, one quarter of the sample size were living in urban areas (Table 1). This result was congruent with ***Alnasir and Al-Falaij, (2016)*** a study compared the family conditions of some incarcerated juvenile male offenders with a similar age group of secondary school students who had no history records of arrest. Reported that more delinquent subjects doubled than non-delinquents came from the rural areas. The researchers found these contradictions in both results could be due to large study sample included in the National Planning Institute.

In relation to family size and Home Crowding Index, the results of this study find that the majority of the study sample were living in large family size and severely crowded homes ***(Table 1)*** and these results were in consistent with ***Shives, (2008)*** who mentioned in his eighth edition book "Basic Concepts of Psychiatric-Mental Health Nursing" that children live in poverty and crowding homes are generally denied access to health care, child care, nutrition, adequate housing, school and environments where social isolation occurs and family functioning is compromised which lead the children to act crimes.

Nearly two thirds of the study juvenile delinquents hadn't self use equipments and so they didn't brush their teeth daily***(Table 2)***. In accordance to ***Al Heila and Aitany, (2008)***' study conducted in Palestine who reported that the Palestinian financial status reflected on the facilities and supplies of the social care institutions for juvenile delinquency. In relation to personal hygiene the majority of the institutionalized juvenile delinquents cutting and cleaning their nails weekly, taking a daily complete shower and males shaving hair. These results reflected the regular applying of the internal Egyptian custodial and social care institutions' roles. Indeed, ***Mohammed, (2013)*** denoted to what extent the roles and laws inside the Egyptian custodial and social care institutions were been respected and applied.

As regards the habits of the female's institutionalized juvenile delinquents during the menstrual cycle, the present study showed that the majority of the females were using healthy disposable pads and taking a complete shower during the menstrual cycle ***(Table 2)***. These findings were in opposite to the results of a study conducted in Cairo by ***Fathy, (2011)*** on the psychosocial profile of institutionalized children who found the majority of the institutionalized female juvenile delinquents had poor hygienic habits especially during the menstrual cycle.

The current study indicates that more than one fifth of the study sample was sometimes practicing homosexual activities and nearly half of the study sample were

sometimes practicing masturbation especially in males ***(Table 2)***. These results were in agreement with the study of ***Liberman, (2007)*** in Chicago who reported that one third of his study sample were acting sexual activities with each other's inside the institutions. Also more than half of the males sample were sharing carpentry activities, two fifths were in agricultural activities and more than half of the females were sharing cooking, sewing and embroidery activities. All of these activities were the scheduled activities of the Ministry of Social Affairs and children choose their preferable activities and might share in more than one activity. These results were supported many other studies results in Egypt, Arabian region and international as ***El-Sherbeiny, (2009)*** in Egypt, ***Owein, (2009)*** in Amman and ***Ghate et al., (2008)*** in London who reported that all their studies samples were sharing in the institutional activities to carry out the institutional roles.

Regarding smoking habits, the majority of the study sample were smokers started smoking before admission at the age of 10-15 years ***(Table 2)***. These findings were in agreement with the study of ***Saiegh, (2009)*** conducted in Qatar and revealed that nearly two thirds of the study sample were smoking before institutions' admission as their fathers and using drugs sometimes. While ***El-Sherbeiny, (2009)*** showed that nearly one quarter of her study sample on institutionalized homeless children in Dakahlia Governorate were smokers and drug users before admission imitating their school teachers.

In relation to the nutritional habits of the institutionalized juvenile delinquents, the current study showed the majority of the children were eating their regular three meals especially in males; the majority were taking snacks between meals and were receiving a good daily nutrition pattern especially in males ***(Table 2)***. These results were contradicted with the results of ***El-Sherbeiny, (2009)*** in Dakahlia Governorate and ***Owein, (2009)*** in Amman who reported that about two third of their study sample were eating less than body requirements in the adolescence period –as being emphasized by ***Lorenzo, (2012)***- and food wasn't supervised under special nutritionists that help to provide balanced diet to children, in addition to the bad nutritional habits among those children before and after institutional admission.

In concern to sleeping pattern of the institutionalized juvenile delinquents, about half of the study sample had irregular sleeping pattern; one third had insomnia and more than two third didn't take nap at day ***(Table 3)***. These results were in agreement with the study of ***El-Sherbeiny, (2009)*** in Dakahlia Governorate who reported that two thirds of the study sample used to sleep more than 9 hours daily; about half of the institutionalized children complained insomnia at night and half of the study sample didn't take nap at day. Also all the institutionalized juvenile delinquents kept their daily morning exercises inside their institutions and about two thirds of them practiced their weekly preferable sports ***(Table 3)***. These findings were supported with the results of ***Mohammed, (2013)*** who revealed that to which extent the roles related to exercises and sporting activities inside the Egyptian custodial and social care institutions were been respected and applied.

Regarding the weekend recreation, the majority of juveniles were spending their weekend inside the institutions especially in males' institutions ***(Table 3)***. This result was contradicted with ***Mahmoud and Ahmad (2011)*** study in Banha City, Qualiobia Governorate who reported the majority of juveniles spent their leisure time and weekend in the street. It also contradicted with ***El-Sherbeiny, (2009)*** in Dakahlia Governorate who detected that nearly half of males were spending their weekend outside

shelter at cinema, coffee shop, computer center or with friends.

This study reveals that nearly one fifth of the study sample were performing over institutional duties; nearly one sixths of the study sample were forbidden from their relatives visits and more than one fifths of females sample were exposed to shaving their hair in case of mistakes ***(Table 3)***. These results were in agreement with the results of ***Owein, (2009)*** in Amman who stated that one third of her study sample were doing over duties inside the institutions and no relative visits for a period as ways of children punishing if they did mistakes.

The current study showed that more than one third of the study sample suffered chronic illnesses as rheumatic, cardiovascular, diabetes mellitus and hepatic diseases ***(Table 4)***. These results were in disagreement with ***El-Sherbeiny, (2009)*** in Dakahlia Governorate who reported that more than one tenth of the study sample complained chronic diseases especially in females but, some of them were receiving medications for these diseases under medical following up according to the respected institutions medical services.

The current study indicates that nearly two fifths of the institutionalized juvenile delinquents suffered infectious diseases especially the dermatological problems as scabies and tenia due to exposure of children to crowding inside the institutions ***(Table 4)***. These results were in agreement with ***Kelly, (2011)'*** study in Australia who reported the differences between the juvenile offenders and adult ones in their homes before admission; detecting that one quarter of the study sample suffered skin infectious diseases because of the crowding conditions in their homes. Regarding parasites problems, one tenth of the study sample were suffering many parasitic infestations especially enterobiasis pin worm and lice/ nits. These results could be subjective due to data based on juveniles self reported perception and not evidence based laboratory findings. In according to ***El-Sherbeiny, (2009)*** nearly two thirds of the study sample conducted in Dakahlia Governorate were suffering parasites problems and agreed with her study result that entrobiasis pin worm was the most spreading parasites among institutionalized children.

This study reveals that about half of the study sample had road traffic accident; nearly half of the study sample suffered previous wounds and fractures; about one third of the study sample suffered previous burns and more than one tenth suffered other injuries in head, face and nerves/veins/arteries ***(Table 4)***. These results were in agreement with ***Abed, (2010)'*** study conducted in Ghazza and reported the majority of juvenile delinquents had previous wounds, fractures and burns because of many accidental injuries and somatic abuse before admission. In relation to previous surgeries and hospitalization periods of the juvenile delinquents, nearly about one third of juveniles had been performed previous surgeries before and after admission especially tonsillectomy, appendectomy and orthopedic surgeries ***(Table 4)***. This result was in agreement with ***Abed, (2010)'*** study conducted in Ghazza and reported that half of the juvenile delinquents who suffered previous accidental injuries also had been performed previous surgeries for them and spent various periods in hospitals. These results were in disagreement with ***El-Sherbeiny, (2009)***' study in Dakahlia Governorate who reported that less than one tenth of the total sample had different types of operations in different systems were performed on them.

The majority of the study sample suffered acute illnesses as backache, joints' inflammation, dysuria/ oliguria, constipation, muscle pain/ cramp and urinary tract infection ***(Figure 1)***. This result was in agreement with ***Fathy, (2011)*** Whose research titled "Psychological Profile of the

Institutionalized Children" reported that about two-thirds of the problems presented to the primary health care centers from the social care institutions were acute in nature due to exposure of children to crowded conditions and low hygienic precautions inside the institutions as urinary problems, respiratory infections, trauma cases, scabies and lice.

The physical examination of institutionalized juvenile delinquents showed that skin problems among juveniles were nearly two thirds especially warts/ skin tags and scabies; mouth and eye problems among children were more than half of the study sample especially the problems of dental caries/ decayed, bleeding gum, eye discharges, inflammation and redness ***(Table 7)***. Most of these problems were mainly prevailing among children due to the continuously increasing of the institutional crowding levels, low hygienic levels, and shortage of the juveniles' self equipments as teeth brush, soaps, linens, pillows, towels and uniforms. These findings were congruent with the results of ***Al Heila and Aitany, (2008)*** on the Palestinian children who reported that the dermatological problems, dental problems, visual problems and central nervous system problems were the most common problems among the homeless and delinquents children. Also these results were incongruent with the results of ***El-Sherbeiny, (2009)*** in Dakahlia Governorate who mentioned that the most common health problems were the gastrointestinal problems with more than three quarters of the study sample and the majority were suffering urinary problems.

The current study finds that more than one fifth of the total sample suffered hair problems especially hair dandruff and lice; more than one tenth were suffering ear problems especially ear discharges and excessive wax and small percent of children suffered as limping ***(Table 5)***. Many of these problems were prevailing among children due to increasing of the institutional crowding levels, low hygienic habits among children, and shortage of the juveniles' self equipments but, limping problems among children were due to children' history of previous accidents and injuries before admission. These results were in agreement with ***El-Sherbeiny, (2009)*** in Dakahlia Governorate who emphasized that more than one fifth of the study sample were suffering auditory problems. Also one third of the institutionalized juvenile delinquents were admitted with somatic abuse as wounds and burns ***(Table 5)***. In according to ***Abed, (2010)***' study conducted in Ghazza**,** the majority of the study sample of institutionalized juvenile delinquents had previous wounds, fractures and burns because of many accidental injuries and somatic abuse before admission.

The current study asserted that the majority of the juvenile delinquents had normal weight, less than one tenth of them were over weighting and very small numbers of them were suffering under weighting and obesity ***(Table 5)***. These results could be due to the institutions were following the Egyptian institutions' rules related to the nutritional system. These results were in disagreement with ***El-Sherbeiny, (2009)*** who emphasized that nearly half of the study sample were suffering anemia; more than one quarter were suffering thinness and more than one tenth were obese.

Regarding psychological health status, more than one third of the juvenile delinquents were average self-esteem status. However it was expected from the researchers to find low self-esteem more worthful among those children due to their crimes, institutionalization punishment methods and their poor socioeconomic factors ***(Table 6)***. These results could be due to those children were developed in the context of special violence families and neighborhood. This finding was incongruent with the study result of ***Fathy, (2011)*** in

Cairo and ***Amer, (2007)*** in Egypt who stated that the majority of their studies sample from institutionalized juvenile delinquents had low self-esteem status which affected their psychological status during their institutionalizing periods.

Concerning the social health status, the present study found that more than two fifths of the study sample were acting low physical and verbal aggression ***(Table 6)***. These findings were in opposite to the reports of ***Shives, (2008)***' eighth edition book "Basic Concepts of Psychiatric-Mental Health Nursing" and ***Taha, (2013)*** in Greater Cairo Governorate who asserted that more than half of the study sample were acting highly physical and verbal aggression before and after institutionalized admission. Regarding the juveniles' violence and anger condition, about two fifths of the study sample were acting highly violence conditions as well as about half were acting highly anger conditions. These findings were congruent with the results of ***Al Heila and Aitany, (2008)***' study on the Palestinian children and ***Taha, (2013)*** in Greater Cairo Governorate who found that more than two thirds of their studies sample were acting highly violence states and more than half of the study sample were acting highly anger states. In this context, the reports of ***National Audit Office, (2006)*** in London, ***National Centre for Social Research, (2009)*** in London and ***Independent Commission, (2010)*** in United Kingdom supported this study findings regarding to the antisocial behaviors of the institutionalized juvenile delinquents which had reported that the levels of the antisocial behaviors among those children have been beaten the measures inside the custodial and social care institutions during the first periods of punishing depended on their previous antisocial behaviors at their schools and their families before admission which were mainly because of poverty and low family functioning relations or coping styles.

As regard the institutions environment, all institutions study sample had no safety measures, the majority with insufficient security, about half with crowded rooms and bad kitchen services ***(Table 7)***. In accordance to ***El-Sherbeiny, (2009)*** mentioned that three fifths of the homeless and delinquents children shelters of the study sample in Dakahlia governorate had safety measures. Also ***El-Sherbeiny, (2009)*** in Dakahlia Governorate, ***National Centre for Social Research, (2009)*** in London and ***Fathy, (2011)*** in Cairo found that many of the institutions and shelters for both homeless and delinquents children were crowded and unsuitable for the institutional rehabilitation.

As for the lightening and ventilation of the institutional rooms, the current study emphasized that all the institutions of the study sample had natural and artificial lightening and ventilation. Moreover about three fifths of the institutions were containing regular water supply, good sewage disposal and good refuse disposal collection ***(Table 7)***. These results were on the same line of the results of ***El-Sherbeiny, (2009)*** who reported that three fifth of the institutions of the study sample were using natural and artificial lightening and ventilation. Moreover the results of ***Abed, (2010)*** in Ghazza supported these results by reporting that three fifths of the institutions had regular disposal collection and about four fifths were containing good sewage disposal and regular water supply.

Concerning the applying services inside the institutions, the present study finds that nearly the majority of the study sample had good kitchen services and safe stairs but three fifths of the study sample had unsuitable recreational level. Generally, the general cleanliness level and the general environmental sanitation inside the institutions of the study sample were definitely suitable and sanitary at all the institutions ***(Table 7)***. The study results of ***El-Sherbeiny, (2009)*** were on the same line

of this study results which asserted that three fifths of institutions in her study sample had suitable kitchens; all institutions had recreational activities as T.V, computer and club and about three fifths of her study sample had suitable cleanliness level. This consistency in results could be due to both studies were conducted within the same institutions with the greater Cairo Governorate.

Regarding the institutions' health team, both medical staff as the physician, dentist, orthopedic doctor, ophthalmologist and nurse and paramedical staff as psychologists, nutritionist, psychiatrist and social workers were insufficient at all institutions as well as incomplete medical services at only three fifths of the institutions in the study sample ***(Figure 2)***. Concerning the institutions' health clinic, emergency medications, equipments and supplies needed for physical examination, first aid, bed making and dressing were insufficient in three fifths of the institutions in the study sample. Medical facilities inside the institutions and disinfectant solutions were insufficient at all the institutions of the study sample. In this context, both of ***Shobeir, (2006)*** in Ghazza and ***Al Heila & Aitany, (2008)*** on the Palestinian children stated that the medical services which applied at the most of the institutions in their studies were insufficient and there was a gap between the Ministry of Health and these institutions where insufficient medical staff worked. Moreover, the results of ***El-Sherbeiny, (2009)*** supported these study results by emphasizing that physicians and nurse were working only as visitors in these institutions. Furthermore, medical services, medical facilities, solutions and emergency medications were 100% insufficient. While, equipments needed for conducting physical examination, first aid and bed making were found in all institutions.

Regarding the relation between the juvenile delinquents type of crimes and their psychological health status, the present study clarifies that there was no significant relation between the juvenile delinquents' type of crimes and their self-esteem ***(Table 8)***. This result was incongruent with the result of ***Fathy, (2011)***' study in Cairo who asserted that there was a significant relation between the juvenile delinquents' type of crimes and their self-esteem. While there were a highly significant relation between the juvenile delinquents' type of crime and their general antisocial behaviors. This result was in agreement with ***Taha, (2013)***' study in Greater Cairo Governorate who asserted that there were a significant relation between the juvenile delinquents' type of crimes and all their antisocial behaviors and maladaptive behaviors.

Regarding the relation between the juvenile delinquents' current health status and their institutional crowding index and institutional duration, this study shows that there were insignificant statistical relationship between the juvenile delinquents' acute diseases and their institutional duration and there was a significant statistical relation between the juvenile delinquents' acute diseases and the institutional crowding index ***(Figure 5 & 6)***. These results were incongruent with ***Abed, (2010)*** who mentioned in his study in Ghazza that there were a highly significant relation between the juvenile delinquents' acute diseases and their institutional duration and the institutional crowding index.

Conclusion:

In conclusion, the findings of this study revealed that half of the juvenile delinquents were committed infractions type of crime, ranking the middle child in family living in severe crowded homes . The majority of those children stopped education before admission and residing in rural or slum areas. Furthermore, most of the juvenile delinquents were smokers and drug users, about half of

them had sleeping problems and experience homosexuality. As regard their health history, road traffic accident, allergies and infectious diseases recorded the highest occurrence especially scabies and parasitic infestations while, the most current health problems were backache, joints inflammation, urinary tract infection and bronchitis. Indeed physical examination found skin abrasions, injuries and signs of somatic abuse, fractures, burns signs, eyes and mouth inflammation. The findings also demonstrated more than one third of juvenile delinquents had low self-esteem and high antisocial behaviors. Moreover, the majority of the institutions environment was with insufficient security, safety measures and crowded. In relation to the institutions' health team, medical and paramedical staff, clinical facilities and disinfectant solutions were unavailable as well as the majority of institutions had incomplete medical services and deficient physical examination equipments, first aid kits, bed making linens, dressing supplies and emergency medications.

Recommendations

Based on the results of the present study, it can be recommended that:

- Further research study should be done to implement and investigate the proposed protocol for health management of Institutionalized Juvenile Delinquents that's evidence – based in relation to prevent health problems of Juvenile Delinquents

- Periodic physical examination and screening for early identification and detection of health problems and prompt intervention.

- Providing adequate nursing care for juvenile delinquents with chronic illnesses as diabetes mellitus, bronchial asthma, skin allergy and parasitic infestation.

- Carrying out psychiatric and mental health strategic services related to all forms of exploitation as violence, drugs, smoking and sexual abuse.

- Organizing parenting education and counseling programs clarifying the importance of child education and supervision.

- Health team in Institutions for Juvenile Delinquents are in need to a simplified illustrated and comprehensive Arabic booklet including information about those children's health problems and needs and how to manage.

- Ensuring safe and secured environment with appropriate safety measures, crowding, living furniture and free from waste products.

Based on findings of the present study, health management protocol has been proposed (Appendix I).

Appendix I

A developed health management protocol for Institutionalized Juvenile Delinquents according to **Saminsky , (2010) and Purson et al, (2010).** :

Purpose: To outline community health nurse responsibilities on management through the three levels of prevention:

- **Primary prevention**

- Improve physical environment (community, home).
- Provision of adequate housing.
- Health education: -Sex education, Drug and alcohol education, and- Good nutrition.

- Advocacy.
- Supporting legislations that help the poor.
- Increased minimum wage.
- Access to health care.
- Testing effective coping behaviors.
- Teaching avoidance of potentially violent situations.
- Interpersonal skills training.
- Develop interrelationships with service providers.
- Recommendations regarding food handling and exposure to infectious diseases.
- Importance of good nutrition.
- Referrals to legal assistance.
- Outreach program.
- Locating delinquents through outreach programs.
- Multi service programs in service sites.

- **Secondary prevention**

- Health screening, screening for chronic illness , and screening for TB, HIV and substance abuse.
- Referral program.
- Case management.
- Case finding.
- Diagnostic services.
- Providing treatment for acute illness.
- Treating potentially life threatening illness (e.g., dehydration of young children).
- Immunizations.
- Monitoring psychiatric status and compliance with medical regimen.
- Monitoring status of infectious diseases.
- Providing on-site care in shelters and services centers.
- Mobile treatment program.
- Monitoring changing in health status.
- Providing access to basic nutritional needs.

- **Tertiary prevention**

- Control spread of disease.
- Treatment of TB and AIDS.
- Drug and alcohol treatment programs.
- Treatment of mental illness and treatment for major illness and injuries.
- Strength support systems.
- Management of chronic illness and management of AIDS symptoms.
- Protection from violence.
- Treatment for major physical, psychological and social illnesses.
- Promoting wet and dry detoxification.
- Assisting children to get into health programs.
- Supervised housing.
- Increased independence.

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